

## Claims

1. A microwave plasma sterilizing method wherein plasma is generated inside the object being sterilized by microwave-excited volume-wave plasma discharge in the gas that produces an active species with a sterilization effect in the presence of plasma and said generated plasma is used for sterilizing the object.
2. A microwave plasma sterilizing method according to Claim 1 wherein said gas that produces an active species with a sterilization effect in the presence of plasma is oxygen gas.
3. A microwave plasma sterilizing method according to Claim 1 wherein said gas that produces an active species with a sterilization effect in the presence of plasma is a mixture of helium gas and oxygen gas.
4. A microwave plasma sterilizing method according to Claim 1 wherein said gas that produces an active species with a sterilization effect in the presence of plasma is a mixture of argon gas and oxygen gas.
5. A microwave plasma sterilizing method according to Claim 1 wherein said gas that produces an active species with a sterilization effect in the presence of plasma is a mixture of oxygen gas and nitrogen gas.
6. A microwave plasma sterilizing method according to Claim 5 wherein said mixture of oxygen gas and nitrogen gas consists of 1 part oxygen and 4 parts nitrogen gas.
7. A microwave plasma sterilizing method according to Claim 1 wherein said sterilizing object is an object packed in a perforated resinous package.
8. A microwave plasma sterilizing method according to Claim 1 wherein said sterilizing object is a medical instrument packed in a perforated plastic package.
9. A microwave plasma sterilizing method according to Claim 1 wherein said volume-wave plasma discharged in said gases is excited by pulsed microwaves.
10. A microwave plasma sterilizing device comprising a microwave generator for outputting pulsed microwaves and a vacuum chamber with a gas inlet, outlet for pump and opening and closing

plates, wherein the microwave inlet for introducing microwave and a microwave launcher of the sandwiched structure where the quartz plate for generating volume-wave plasma is sandwiched by a stainless steel perforated plate are arranged on one side in said vacuum chamber, and a movable metal plate is arranged opposite to said microwave launcher on the other side in said vacuum chamber, and wherein the object being sterilized is placed between said microwave launcher and said movable metal plate.

11. A microwave plasma sterilizing device according to Claim 10 wherein said movable metal plate is connected to an elevating means to allow positional adjustment.